

## WHAT IS CLAIMED IS:

1. A method for measuring properties of a target surface comprising natural tissue, said method comprising the steps of:
  - providing a probe, said probe having a pair of spaced apart electrodes in electrical communication with each other,
  - providing a voltage generator, said voltage generator being capable of supplying an increasing voltage between said electrodes,
  - providing a voltage meter, said voltage meter being capable of indicating the voltage between said electrodes,
  - placing said electrodes in contact with the target surface,
  - supplying an increasing voltage from said voltage generator to said electrodes until current between said electrodes reaches a predetermined value, and
  - noting said voltage which occurs when said current reaches said predetermined value.
2. The method according to claim 1 further comprising the step of monitoring the current between said electrodes in real time.
3. The method according to claim 1 wherein said predetermined current is from 0.1 to 3 microamperes.
4. The method according to claim 1 wherein said predetermined current is 1 microamperes.
5. The method according to claim 1 wherein said voltage increases at the rate of 0.1 to 10 volts per second.
6. The method according to claim 5 wherein said current nonlinearly increases from a baseline value to said threshold value.
7. The method according to claim 5 wherein said current monotonically increases from a baseline value to said threshold value.
8. The method according to claim 7 wherein said baseline value is 0 volts.
9. The method according to claim 1 wherein said target surface comprises animal tissue.
10. The method according to claim 9 wherein said target surface comprises human tissue.
11. A device for measuring the barrier properties of a target surface comprising natural tissue, said device comprising:
  - a probe, said probe having a pair of spaced apart electrodes in electrical communication with each other, said electrodes being contactable with the skin of a subject,

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a voltage generator, said voltage generator being capable of supplying an increasing voltage between said electrodes,

a voltage meter, said voltage meter being capable of indicating the voltage between said electrodes, whereby said voltage meter indicates the voltage between said electrodes when current therebetween reaches a predetermined value.

Sub.

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12. A device according to claim 11 wherein each said electrode has a contact area of at least 0.01 square mm.

13. A device according to claim 12 wherein at least one said electrode has a contact area of at least 1 square mm.

Sub.

A<sup>3</sup>

14. A device according to claim 12 wherein each said electrodes are spaced apart a distance of 3 to 10 mm.

15. A device according to claim 11 having a first electrode and a second electrode, wherein said first electrode comprises a plurality discrete contact surfaces, said plurality of discrete contact surfaces being disposed about said second electrode in a radial pattern

16. A device according to claim 15 wherein said first electrode circumscribes said second electrode.

17. A device according to claim 14 wherein said voltage generator provides a voltage increasable from 0 to 30 volts.

18. A device according to claim 17 wherein said voltage is monotonically increasable at a rate of 0.1 to 10 volts per second.

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